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Lonnie Kendall

% DOUG DEWEY
206 JAMES ST.
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EDITOR
Bill Roberts

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** WELCOME **

THIS IS OUR VERSION OF THE QL. AS YOU HAVE NOTICED, WE HAVE MADE THE QUANTUM LEAP TO GET OUR NEWSLETTER UP TO DATE. I HAVE ALSO MOVED DURING THE SUMMER. HOPEFULLY, MAKING THE QL WILL ALLOW US TO DO TWO THINGS: 1) PREVENT A LOT OF CONFUSION ABOUT CURRENT ISSUES AND 2) HELP US KEEP THE ISSUES ON TIME.

THERE HAS BEEN A LOT OF CONFUSION ABOUT MOON BASE ATTACK IN THE JANUARY ISSUE. THE LISTING DOES NOT HAVE ANY MISSING LINES. BUT TAKE NOTE, LINE 9250 SHOULD BE TYPED AS FOLLOWS: 9250 PRINT AT 10,0;"156 BLANK SPACES".

FAUX PAS OF THE EDITOR: DOUG'S TELEPHONE NUMBER WAS INCORRECT FOR SEVERAL ISSUES. THE NUMBER IS NOW CORRECT.

A RIGHT-TO-LEFT PIXEL-BY-PIXEL SCREEN SCROLL

by Dick Scoville

As you can see, the following machine code program can be located anywhere you wish. The ideas involved won't be new to readers of earlier articles. (I only hope I haven't given you exactly the same thing already!)

It is very easy to double a number that is given in binary, just as it is very easy to multiply a number by 10 if it is given in decimal--in each case, you just add a 0 on the right. That is, twice the number

$$x_7x_6x_5x_4x_3x_2x_1x_0$$

(these are zeroes or ones)

is the number

$$x_7x_6x_5x_4x_3x_2x_1x_0\ 0.$$

Since our object is to shift bits to the left, this is a quick way to do it. If our number were in the A register, the instruction

```
ADD A,A
```

would "double" it by adding A to itself. Of course if the result is too big, that is, if x_7 is 1 the new contents of the A^7 register will be

$$x_6x_5x_4x_3x_2x_1x_0\ 0.$$

and the carry flag would be set (reset if x_7 were 0).

```
ADC A,A
```

This instruction is similar to ADD A,A--it will add A to itself but also add one more to the answer if the carry flag was set previously. It will then adjust the carry flag depending on overflow. Here are some examples showing what happens to A and the carry flag after an ADC A,A instruction:

old A	old carry	new A	new carry
00000001	0	00000010	0
01001001	1	10010011	0
01001001	0	10010010	0
10110000	1	01100001	1
xabcdefg	y	abcdefgy	x

Here is the program:

```
DD00 LD HL,FF57    21FF57    1
DD03 LD B,20       0620      2
DD05 AND A         A7        3
DD06 LD A,(HL)     7E        4
DD07 ADC A,A       8F        5
DD08 LD (HL),A     77        6
DD09 DEC HL        2B        7
DD0A DJNZ FA       10FA      8
DD0C LD A,40       3E40      9
DD0E AND H         A4        10
DD0F LD B,20       0620      11
DD11 JR NZ,F3      20F3      12
DD13 RET           C9        13
```

Line 1 loads HL with the last byte of the display file (which runs from 4000 to 57FF). We will operate on each pixel row of the screen by looping through its 20 (32 decimal) bytes. We use register B as an index since that is the register that DJNZ uses. Line 3 has the important purpose of making the carry zero. (All the logic operators--AND, OR and XOR--do this.)

Lines 4 to 8 form the actual loop. When we enter the loop, HL will point to the right-most byte of a pixel row, and the carry will be 0. Keeping in mind how ADC A,A shifts bits to the left, you can see how we have entered a 0 on the right and moved all the other bits to the left. When we leave the loop, that is, when B has finally been decremented to zero, HL will point to the right-most byte of a n o t h e r pixel row, and the carry flag will contain the (unwanted) value of the pixel that has been shoved off the left margin. Of course at this point we might be done, having gone through all the pixel rows. Lines 9 and 10 decide that for us--we will be done only if HL holds a number less than 4000,

```
   4 *     0         0       0
0100    0000      0000    0000
  ↑
.....H.....      .....L.....
```

that is, only if the bit in H indicated has become 0, that is, only if (H AND 40) is 00.

Line 10 has the further happy effect of resetting the carry flag, which Line 11 does not ruin. Thus in Line 12, if the result of the AND was not zero, we jump back to Line 4, the beginning of the loop, with the carry flag reset.

If you would like to have a Scroll-to-the-Right routine, not very much has to done--you will want to s t a r t at 4000, and increment HL. The test for the end of the screen is a bit messier, but recall that RRA (whose code is 1F) is the perfect analog of ADC A,A. Only the direction of the shift changes. I'll end the article with a simple illustration of the routine in use (DD00=56576dec):

```
10>LET y=100
20 LET y=y+2*INT (2*RND)-1
30 PLOT 255,y
40 LET abc=USR 56576
50 GO TO 20
```

If you think about how RANDOMIZE and USER work, you will understand why replacing LINE 40 with

```
*40 RANDOMIZE USR 56576
```

is not such a good idea.

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NEWS RELEASE***** May 12 1985

SUNSET ELECTRONICS announces a new line of EPROM cartridges for the TS 2068.

They will include an EPROM programmer,blank EPROM cartridge and a four slot EPROM expansion board-available complete,as a kit,or bare board.Also will be EPROM s of approximately 30% of all the TS 2068 cassette programs currently available.They are presently negotiating for duplicating rights with several companies.These EPROM s will also be offered as a "back-up" copy for anyone already owning a program on an original cassette tape.Products should be available June 15th.

PRO FOR CIVIL ENGINEERS AND SURVEYORS GETS

A RATING OF 10 FOR THE PROGRAM
REVIEIW BY GEORGE ZALAQUETT

In the past few years that I spent in the engineering profession I have encountered various microcomputers and worked with plenty of software including some of the largest turnkey CAD systems (Computer Aided Design or Drafting). Although I am in the mechanical engineering end of it I have agreed to review PRO for civil engineering and land surveying. Since the day PRO was submitted for review I had to brush up on some surveying and try to remember what I could from the surveying job I held one summer in junior college. So in reviewing PRO I have done some homework by checking arround the industry to see what is available in the civil engineering software for the buisness computers.

PRO is the first real poffesional engineering software I have encounterd for the TS 2068. PRO is a program that was written by a poffesional for his own use and since its application was so practical in surveying his fellow office mates started using it and now it is available for professional civil engineers, surveyors and students. The program lists for $245 which puts it out of the price range of nonprofessionals. The program will not pay for itself by using it once to see what a property looks like on the computer and get a drawing on the 2040 printer or draw lines across the screen. Although PRO is a great surveying learning tool its price tag places it out of reach of the students that might own a TS 2068. Hence if you are a professional surveyor and own a TS 2068 and do not have a buisness computer, PRO is the greatest buy yet even though I have compared equivalent software for the IBM and HP that had a smaller price tag.

The program is menu driven and divides the screen into several windows. The main feature of this program is the Continuious Video Graphics "CVG" window which is used for updated display of the work. When the help fuction is selected the abbreviated main menu window is displayed at the left side portion of the screen (see screen dump in Figure), and when a command is selected the menu disappears leaving the "CVG" window in its former state and a submenu will appear in the user friendly information window which occupies the lower two lines of the screen where comments and other questions the computer might ask to guide the user in providing the computer with the required information. The author has generously made the routine that makes the desapearing menu possible (which is called the "encroaching disappearing menu window") available for the TSUG which will be included in this issue. A detailed hard copy menu can be obtaind on the 2040 printer.

PRO will povide a plot on the screen of all the work being preformed. PRO has all the functions that a surveyor would need for lot and subdivision work. The vocabulary is comprehensive and large

To order write:
Ken Pankow
Pankow Engineering Co.
1278 Hendersonville Rd.
Asheville, NC 28803

approximatly fifty commands yet they are easy to remember and access espesially for someone with surveying knowlege. The main menu window which has all the primary functions and are accessible by pressing one letter only, which is usually the first letter in the command. Among the many functions that PRO supports are area, curve fit, inverse and closure adjustment which provides the amount of error, then makes the adjustment. The program also supports normal to line traverse and rotate. The only command that is not in this program is the spiral which is popular on civil engineering software for the IBM and HP but it is not required for property and subdivision work.

As for the graphics which most of the readers are anxious to read about, it is excellent. The CVG always has an updated view of the work. By selecting the video command, the user may zoom in on a few points to view the poperty section by section. At this point the user may do whatever changes he or she wishes and then return to an over all view of the work, or select a certain scale. The computer will show the scale on the top of the screen at all times. The feature that makes your 2068 computer with the 2040 printer compete with the IBM and HP and beat them hands down is the output drawing. The work can be transfered to the 2040 printer at any desired scale. This is accomplished by having the 2040 printer take passes at the screen and by the joining the printer strips together, a large drawing is obtained. The computer will automatically decide how many passes are required depending on the scale selected. (see Figure showing large plot versus screen dump. The program also allows the user to get a printout listing of the points and their coordinates to the 2040 printer.

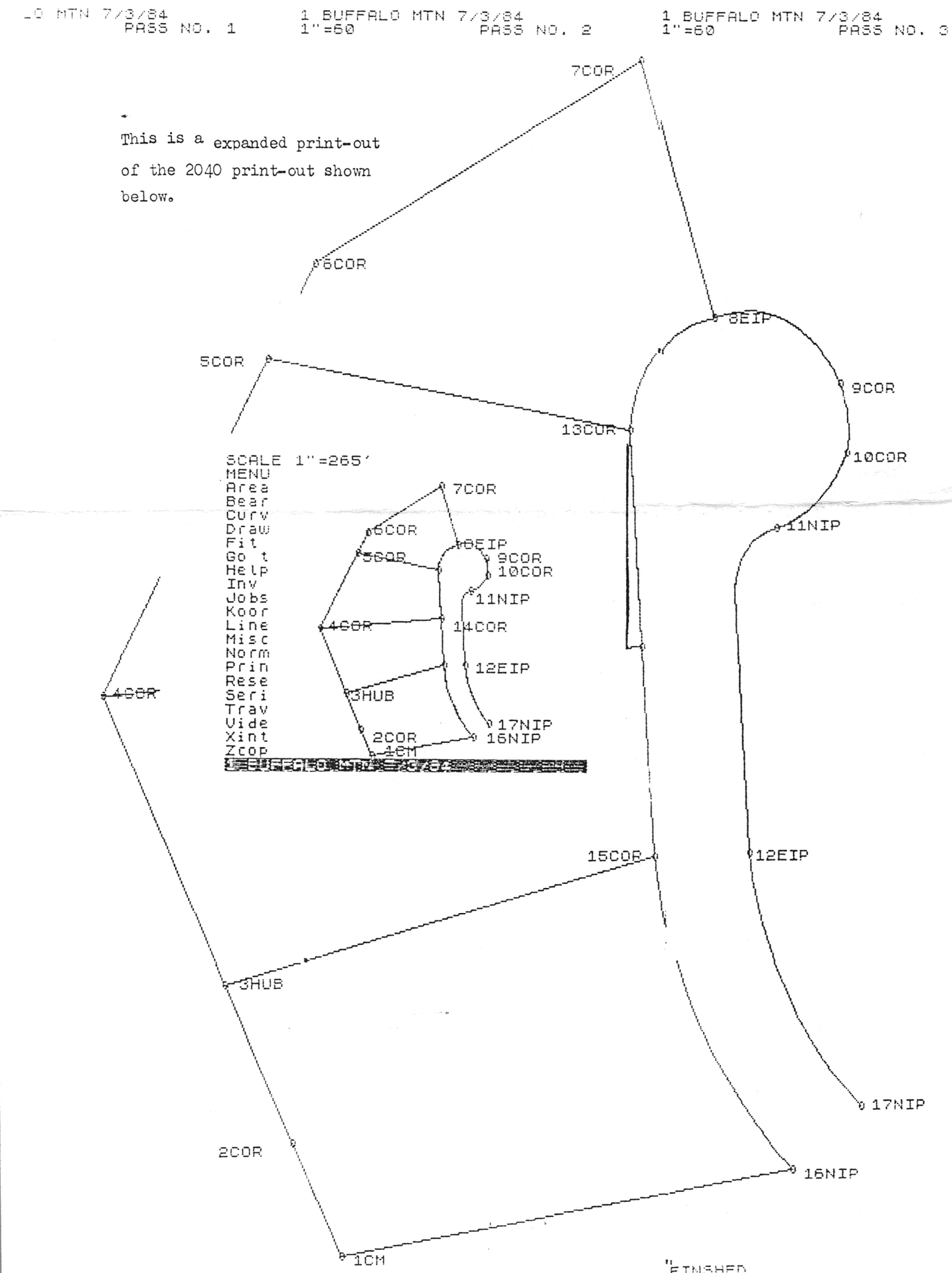
PRO is capable of handeling five jobs at once and they can be saved or loaded all at one time. Once the jobs are loaded the user has the option of selecting any of the jobs and may go back and forth between jobs. Each job is capable of handeling up to 100 points of data which makes it capable of handeling a good size subdivision.

Now for the rating part. Since this program is written for use by a small percentage of the 2068 users it is difficult to rate. Therefore I will brake the rating into Three parts. First, the program itself which I will give 10 out of 10 since the program is complete and it does the job well and it makes the 2068 owner proud of his computer.

Second, the copy of the documentations which I received were Xeroxed 2040 printouts, as a result sections of the documentations were too light to read. I hope that is not what the author sends out with the software even though the program is self explanatory. The documentaions have lots

of room for improvement to make it clear to the new system buyer. For documentation contents 6 out of 10 is all I could grant for now keeping in mind that the author could be working on that and the packaging of the program.

Third, the price rating. If I was a professional surveyor I would probably give the price a good rating, but if I was your average computer owner the price would get a poor rating. Therefore, I leave the rating of the price for the reader to decide. The sample of work shown in the figure, shows what the program is capable of doing. Keep in mind that there is no other way to get a surveying CAD system (software, computer, printer and recorder), with graphics capability (video and hard copy printout) for less than $500.



8K ROM BOARD FOR the TS 1000
by Bill Roberts

Dr. Paul Hunter, 1630 Forest Hills Dr., Okemos, Michigan 48864, has two excellent products out for the TS 1000. One of these products, the 8K Nonvolatile Memory Board has already been reviewed in our newsletter. Dr. Hunter also makes an 8K ROM board, which I ordered as a kit several months ago and put together. After using the board for a while, I felt that it was time to share my assessment.

The actual PC board is the same board used for the NVM board, however, when used as a ROM board the circuit is much simpler. Most of the resistors, transistors, and diodes required for the NVM board are not needed on the ROM board. The kit consist of 5 capactors, 1 resister, 1 diode, 1 74LS139, 4 24 pin DIP sockets ,1 16 pin DIP socket, 1 female 46 pin connector, 1 male 46 pin connector, 1 reset switch, and the PC board. It should take an average electronics hack about 2 to 3 leisurely hours to build the kit.

No review of the kit would be complete without a few words about the PC board. It is the best board that I have seen for any electronics kit... bar none. The board is made of the highest quality material and is even solder masked! The position and part number of each part is clearly stenciled on the board. When the board is finished, it has a nice solid "feel" to it. Make no jokes about this board, this is the standard against which all other PC boards for the TS 1000 should be judged against.

The instructions that I used to assemble the 8K ROM kit were included as part of the assembly instructions for the Nonvolatile Memory Board - there were no instructions included in the ROM kit that was mailed to me. I feel sure that if you order just the ROM board the instructions are included. As it turned out, I had no problems in building the board. Because there are a lot of options to choose, it did take me a while to figure out exactly how I wanted to build the kit.

There is one suggestion that is very useful to include in construction of the board. Instead of using the 24 pin DIP sockets included in the kit, use 24 pin ZERO INSERTION FORCE sockets. My board was built with two ZIF sockets and two regular sockets. It never occured to me that I might need more than two ZIF sockets. I now wish that I had used four ZIF sockets for greater versatility.

As provided the ROM board can be used only in a 32K system. By use of a jumper (J1), any of the four possible 8K blocks can be addressed. A simple modification though, allows the board to be used in a 64K system. For my board, I decided to have the board addressed in the 8-16K region. The procedure is as follows:

1) Bend pin 1 of the 74LS139 included in the kit up and over pin 2.

2) Carefully clip pins 4,5,6,8,9,10,11,12, and 13 from a 74LS32. Bend pins 1 and 2 of this 74LS32 straight out. Bend pin 3 of this 74LS32 over and under pin 2. Bend pin 7 of this 74LS32 slightly towards the rear of the chip.

3) Mount the 74LS32 on top of the 74LS139 included in the kit with pin 1 of both chips at the same end. Use superglue or a rubber band to hold the chips together for next step.

4) Being VERY careful not to overheat the chips and using the smallest amount of solder possible, solder the following pins together:

pin 3 (74LS32) to pin 1(74LS139)
pin 7 (74LS32) to pin 8 (74LS139)
pin 14 (74LS32) to pin 16 (74LS139)

5) Solder a small wire about 2" long to both pin 1 and pin 2 of the 74LS32.

6) Solder one of the two flying leads to A15 and one to MREQ NOT. As each lead goes to an input for an OR gate, it doesn't matter which lead goes to which line.

7) Insert the dual ic package into its socket.

8) Connect, at jumper J1, the common line to the block 1 line

The board is now uniquely addressed in the 8K to 16K region and can be used in a 64K system. This circuit combines A15 and MREQ NOT to enable the board. The above procedure actually comes almost directly from Dr. Hunter's assembly instructions for the 8K NVM board. Another option is to devise a paging system to allow both the 8K ROM board and the 8K Nonvolatile Memory board to be address in the same 8K block (this will be covered in another article soon -ed).

This ROM board will work with either four 2716's (8K) or two 2732's (8K). It is possible, by paging between the sockets 1,3 and sockets 2,4, to fully populate the board with four 2732's for a total of 16K of additional ROM.

The price for the kit is $22.95. I am very pleased with my kit and feel that it, along with Dr. Hunter's Nonvolatile Memory board, deserves a 10.

PRESS RELEASE PRESS RELEASE

THIS IS WORD SINC II.5

Word Sinc II.5 has been completed. This new version of the ZX/TS classic was re-written by Peter McMullin in co-operation with Powell Hargrave, to take full advantage of the EPROM SERVICES Centronics I/F for the ZX81/TS1000.

With only a minor change, WSII.5 can drive MEMOPAK, AERCO, or OLIGER I/Fs too!

The program is "ready to load and start printing" with any EPSON code-compatible printer. It is, however, extremely versatile and can be modified easily to accommodate any commonly used printer.

Final Documentation

is now under way. The program has a wide scope of features which may be customized to suit the user's (or his printer's) needs. Therefore, an extremely comprehensive manual seems appropriate. With over 10 pages of appendices compiled so far, the WSII.5 User Manual may approach the legendary T.B. Woods' ZX PRO/FILE manual in magnitude.

In usefulness, too, we hope.

Word Font II.5

is a custom font package. Included is a loader program with 4 fonts: Script.2, Serif Heavy.2, Sans Serif Block, and Computa. A Font Designer utility, also included, allows the user to define his own unique character sets, or modify characters in the supplied fonts, and view enlarged characters on the screen. The manual covers designing characters on various width grids (8 dot height limit), and modifying WSII.5 accordingly. Each supplied font occupies 1.3K, and may reside anywhere in memory. WordFont EPROMS will be available by mid-summer '85.

The PRINTER TOOLKIT

(for EPROM SERVICES I/F ONLY)

a) REPLACES the EPROM SERVICES driver software.

b) Provides several related Machine-Code and BASIC utilities.

TPTK gives two choices of Clive-Code to ASCII translation:

INVERSE= CAPS, with a selection of CTRL codes & (ESC); or

Inverse= lower, with lotsa punctuation & ASCII line graphics.

Routines are provided which permit sending any code from 0-255 to the printer.

WordFont is supported, for BASIC programming and even LLISTing.

PRINTSCREEN** is included.

A BASIC program is included which facilitates bit-image graphics programming, using a READ DATA/ RESTORE routine for storage of compressed literal data in REM statements.

TPTK will be available to run in 8-16K, in a REM statement, or above RAMTOP.

** PRINTSCREEN also available for ANY I/F listed above!

The CENTRONICS I/F

which inspired this mad attack of programming is available from:

INTEGRATED DATA SYSTEMS
30 Brookmount Road,
Toronto, Ont.
Canada M4L 3N1

Or Directly from:

EPROM SERVICES
3 Wedgewood Drive,
Roundhay,
Leeds LS8 1EF
England

Legal size SAE and Postal Reply Coupons get you the E/S catalog, with NUMEROUS products for the ZX/TS. With the Pound at its current value, this is worth investigating!

The Interface is a Dual Centronics Port, 1 in, 1 out. (Hmmm, interesting...) It works perfectly with ZX PRO/FILE. with PRO/FILE Poked as for a TS2040. MEMOCALC is fully supported as well, although MEMOTEXT is not compatible. Believe it or not, we're working on that, too.

The I/F supports LPRINT, LLIST and COPY, INCLUDING COPY as a direct command. Try that with your MEMOPAK I/F!

In wide-ranging software tests, the EPROM SERVICES I/F actually had a better "compatibility ratio" than the MEMOPAK I/F! It works with HOT Z, only if HOT Z's COPY call is changed to directly call the I/F software. Both programs normally use 16507 to store a jump address, and HOT Z wins.

****

WORD SINC II.5.....$30.00 CAN +$1.00 P&H
(includes WSII.5 AND WSII.5G- ANY I/F)

WORD FONT II.5.....$12.50 CAN +$1.00 P&H

2 Add'l Fonts.....$ 8.00 CAN +$1.00 P&H

The PRINTER TOOLKIT.....$15.00 CAN +$1.00 P&H
Prices subject to change.

AVAILABILITY OF ALL SOFTWARE:
<<< JUNE 1, 1985 >>>

SOFTWARE HAS BEEN COMPLETED, BUT PREPARING DECENT MANUALS TAKES SOME TIME.

Registered purchasers will receive free updates, as well as good exchange discounts should a major revision occur.

The Software to be available from Integrated Data Systems, at the listed address, or directly from:

PETER McMULLIN
2340 Queen St. E.,
Toronto, Ont.
Canada M4E 1G9

Word Sinc II.5 copyright c1985, P. Hargrave and P. McMullin
Word Font copyright c1985 P. McMullin
Printer Toolkit copyright c1985 P. McMullin
PrintScreen copyright c1985 P. McMullin

THIS IS WORD SINC II.5

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ

<<0123456789>>
. , : ; ' " ? ! & / * - + = $ # ( ) " [ ] % @ ^ _

Word Sinc II.5 is the latest 80+ column version of Powell Hargrave's classic Word Sinc II.

WSII.5 is a very powerful wordprocessor written to support a readily available printer I/F for the ZX81/TS1000: the EPROM SERVICES Centronics I/F.

WSII.5 does everything its predecessor, WSII.4 (for the MEMOPAK I/F) does plus much more!

FEATURES INCLUDE:

* **NEW AUTO-REPEAT action (courtesy of Powell): now has FAST repeat after a short pause. Romp thru huge text files with dynamic global-ranging cursor.**

* **ASCII FORM FEED sent with each page. (or from text)**

* **PRINTSCREEN feature prints ZX screen characters to any graphics-capable printer. For hard copy of screen text, or use WSII.5 to format printer graphic screens!**

* **SUPPORTS WORDFONT II.5, a multi custom font utility, used here with the SERIF HEAVY.2 font (single AND double-width characters).**

* **EMBEDDED printer escape codes (using printer fonts) are transparent to text justify routines.**

* **WSII.5 contains complete driver code for the I/F card: NO separate I/F software to load!**

* **TEXT space is automatically set up to use as much RAM as is available: WSII.5 checks RAMTOP & E_LINE.**

* **SCREEN will periodically invert if abandoned in a "wait for key" menu state, to avoid screen damage.**

* **WSII.5G version has a bit-image printer graphics programming utility which is incredibly byte-efficient. (It's "music to your memory")**

* **ALL printer-dependent codes are easily modified.**

* **LEFT MARGIN preset permits multiple justified columns of text on 1 page WITHOUT cut-and-paste.**

* **MULTIPLE TABs, Indents, Outdents: Can Do!**

* **28 punct. & math symbols + numerous ctrl. codes. (can substitute any ASCII CHR$ 0-255)**

* **SEARCH, REPLACE, DELETE & MOVE functions supported.**

WordFont Bulletin May 9, 1985.

HERE IS A SAMPLE OF THE TYPEFACES DEVELOPED FOR WORDFONT. WORDFONT IS SUPPORTED BY ALL VERSIONS OF WORDSINC 11.5, AND BY THE PRINTER TOOLKIT FOR THE EPROM SERVICES I/F.

THIS IS SANS SERIF BLOCK, WITH A UNIQUE UPPER-LOWER CASE.
ABCDEFGHIJKLMNOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZ
0123456789?!&%$
ABCDEFGHIJKLMNOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZ
0123456789?!&%$

This is SERIF HEAVY.3, a more stylized typeface.
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789?!&%$
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789?!&%$

This is SCRIPT, a classic custom- typeface application!
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789?!&%$
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789?!&%$

This is COMPUTA, a font which speaks for itself!
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789?!&%$
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789?!&%$

ALL FONTS MAY ALSO BE PRINTED IN INVERSE MODE AS SHOWN HERE. HARD ON RIBBONS, BUT GREAT for EMPHASIS !!

If none of these typefaces suits you, the WordFont package includes a Font Designer program. You can modify any character you don't like, or design your own complete typeface!

WordFont and Word Sinc 11.5 to be available: early JUNE 1985.

Huntington WV.
June 4,1985

Hello Doug:

I certnaly appreciated your phone call.I could have talked with you for several,hours. Several,subjects were left out of course,but maybe some way, and day,we might be able to see each other,face to face.

As,I promised to send you a address,and information for the SINCLAIR/USERS,magazine.

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Sinclair User-Overseas-surface £35.AirMail £60.
Sinclair Prog.-Same as above.

QL User-Surface-£30. Air-£45.

Commodor User-Surface £18. Air £32.

All of the above has Agency Discount-10% ???.

Doug,I like the Sinc/User, very much. The contents,has a Program printout section,for ZX-81,Spectrum 16K,Spectrum 48K Now,beginning QL Tips,programs. Also,has many Basic,tips as to problems Users,have (Why's-do-and don'ts).

Good,and better than the T/S/U's. Many,additional review of present and,avaiable program that have Graphic's,that many of the American program,do not have.(UDG') Which I find,are terrfic!!. As,one might ask? Will,these programs,run on the ZX-81,T/S-1000,and the 2068 ??. My answer,would be YES , Of course,I do have problems, with the address's,peeks,poke's which,are rather different-Spectrum-via-Timex.

As,we talked on the phone, Doug in this aera their isn't any Help!,avaible etc:

Consequently,this is why!!, your NEWS LETTER is very helpful. I would like to pass on to your Group,and readers,they should appreciate,and partisapte to their best,to further the interest in the once (TOY) image this wonderful machine, that it is.

Doug,I'm not very good at letter writing.Hope you might make some use of the above information.

Sincerly

W.E.Walker

(Bill)

PS:Hope your Dad,sends some informatio,We-can use-and returns safely.

Help

Dewey Thanks FR/S-U

```
Dewey
Thanks
FR/S-U
    2 RANDOMIZE
    3 BORDER 7: PAPER 7: INK 0: C
LS
    4 PRINT AT 10,12;"3D WORDS"
    5 PRINT AT 21,4;"PRESS SPACE
TO CONTINUE"
    6 RANDOMIZE USR 1316
    8 POKE 23609,30
    9 BORDER 7: PAPER 7: INK 0: C
LS
   10 PRINT AT 0,10; INK 2; PAPER
 6;"MAIN MENU"
   11 PRINT AT 2,0;"1.Change Size
 of letter."
   12 PRINT "2.Instructions."
   13 PRINT "3.PRINT 3D Words."
   14 PRINT "4. LPRINT Menu."
   15 PRINT "5.NEW program."
   16 PRINT "6. LPRINT Instructio
ns.": PRINT "7.LOAD """"SCREEN$
": PRINT AT 18,0;"Program is in
MEDIUM size letter
                  mode."
   17 IF INKEY$="1" THEN  GO TO 3
00
   18 IF INKEY$="2" THEN  GO TO 2
00
   19 IF INKEY$="3" THEN  GO TO 4
5
   20 IF INKEY$="4" THEN COPY :
GO TO 10
   21 IF INKEY$="5" THEN  STOP
   22 IF INKEY$="6" THEN  GO TO 2
00
   23 IF INKEY$="7" THEN  GO TO 6
00
   24 GO TO 17
   45 CLS
   50 PRINT '' PAPER 0; INK 7;AT
0,1;"Now please follow the promp
ts."
   64 PRINT AT 21,4; INK 7; PAPER
 2;"PRESS SPACE TO CONTINUE"
   65 RANDOMIZE USR 1316
   67 BORDER 7: PAPER 7: INK 0: C
LS
   70 CLS : FOR n=0 TO 10: BEEP .
02,n: NEXT n
   80 INPUT "Pixels from top((■)=
8 pixels)";p
   90 INPUT "letters (7 max)  ";a
$: IF LEN a$>7 OR LEN a$<1 THEN
BEEP 1,-30: GO TO 90
   91 INPUT "Color (0-6)";p$
   92 IF p$="1" THEN INK 1
   93 IF p$="2" THEN INK 2
   94 IF p$="3" THEN INK 3
   95 IF p$="4" THEN INK 4
   96 IF p$="5" THEN INK 5
   97 IF p$="6" THEN INK 6
   98 IF p$="0" THEN INK 0
   99 IF p$="7" THEN INK 7: IF p$
>"7" OR p$>="0" THEN  GO TO 91
  100 LET a=LEN a$: PRINT  INK 7;
AT 21,0;a$: BEEP .1,1: BEEP .1,2
: BEEP .1,3: BEEP .1,4: BEEP .1,
5: BEEP .1,6
  110 FOR f=0 TO 8*a-1: FOR n=0 T
O 7
  120 IF POINT (f,n)=0 THEN  GO T
O 160
  130 PLOT f*4,n*4+135-p: DRAW 4,
0: DRAW 0,4: DRAW -4,0: DRAW 0,-
3: DRAW 3,0: DRAW 0,2: DRAW -2,0
: DRAW 0,-1: DRAW 2,0: DRAW -2,-
2
  140 DRAW 5,5: DRAW 0,4: DRAW 0,
-4: DRAW 4,0: DRAW 0,4: DRAW 0,-
4: DRAW -5,-5
  150 DRAW 0,4: DRAW 5,5: DRAW -4
,0: DRAW -5,-5
  160 NEXT n: NEXT f
  170 IF a$="3D WORD" THEN PAUSE
50: GO TO 40
  180 INPUT "Write some more ? (y
/n)";w$
  181 IF w$="n" THEN  GO TO 240
  182 IF w$="y" THEN  GO TO 185
  185 INPUT "Clear Screen ?";t$
  186 IF t$="y" OR t$="Y" THEN CL
S : GO TO 80
  187 IF t$="n" OR T$="N" THEN  G
O TO 80
  188 GO TO 185
  200 CLS
  202 PRINT AT 0,0; INK 2; PAPER
6;"JOHN HUNTON      --      3D WOR
DS"
  204 PRINT AT 2,0;"This program
allows you to "
  205 PRINT "generate 3D letters
on your"
  206 PRINT "Z.Z.Spectrum."
  208 PRINT
  209 PRINT "First you must selec
t the size "
  210 PRINT "that you want your l
etters to be"
  211 PRINT "then type your lette
rs in and "
  212 PRINT "the computer will do
 the rest"
  213 PRINT
  215 PRINT ; INK 2;"Size 1 =  Sm
all 20 pixels high."
  216 PRINT ; INK 2;"Size 2 = Med
ium 30 pixels high."
  217 PRINT INK 2;"Size 3 =  Larg
e  40 pixels high."
  218 PRINT
  219 PRINT INK 1;"Size 1 = 9  Ch
aracters per line."
  220 PRINT INK 1;"Size 2 = 7  Ch
aracters per line."
  221 PRINT INK 1;"Size 3 = 5  Ch
aracters per line."
  223 PRINT AT 19,0; INK 4;"R=RET
URN      Z=COPY"
  224 IF INKEY$="r" OR INKEY$="R"
 THEN  RUN 10
  225 IF INKEY$="z" OR INKEY$="Z"
 THEN  PRINT AT 19,0;"
                      ":
COPY : GO TO 200
  226 GO TO 224
  240 BORDER 7: PAPER 7: INK 7:
  250 INPUT "Copy to Z.X.Printer?
";s$
  251 IF s$="y" OR s$="Y" THEN  G
O TO 260
  252 IF s$="n" THEN  GO TO 270
  260 INPUT "How Many Copies?"; a
$
  261 IF a$="1" THEN COPY :  GO T
O 180
  262 IF a$="2" THEN  COPY : COPY

  263 IF a$="3" THEN  COPY : COPY
: COPY
  264 IF a$="4" THEN  COPY : COPY
: COPY : COPY
  265 GO TO 270
  270 INPUT "Save SCREEN$ ?";a$
  271 IF a$="y" THEN  GO TO 273
  272 IF a$="n" THEN  GO TO 275
  273 SAVE "3D"SCREEN$
  275 INPUT "Return to Menu ?";w$
  276 IF w$="y" OR w$="Y" THEN  G
O TO 9
```

```
 277 IF w$="n" OR w$="N" THEN  G
O TO 180
 278 GO TO 275
 300 BORDER 7: PAPER 7: INK 0:
CLS
 301 PRINT AT 0,0; INK 2; PAPER
 6;"JOHN HUNTON     -       3D WOR
DS"
 302 PRINT AT 2,0;"With this pro
gram you can "
 303 PRINT "have three different
 sizes of"
 304 PRINT "letters."
 305 PRINT
 306 PRINT "(Refer to Instructio
ns.)"
 307 PRINT
 308 PRINT INK 2;"Enter Size Of
 Characters Require"
 309 PRINT
 310 PRINT INK 4;"1.Small"
 311 PRINT INK 4;"2.Medium"
 312 PRINT INK 4;"3.Large"
 313 INPUT "Size 1,2 OR 3. ?";q$
 314 IF q$="1" THEN  CLS : GO TO
 400
 315 IF q$="2" THEN  CLS : GO TO
 45
 316 IF q$="3" THEN  CLS : GO TO
 500
 317 GO TO 313
 400 INPUT "Pixels from top ((
8)=8 pixels)";p
 402 INPUT "Letters ( 9 max   ";
a$: IF LEN a$>9 OR LEN a$<1 THEN
  BEEP 1,-30: GO TO 402
 404 INPUT "Colour (0-6)";p$
 406 IF p$="1" THEN  INK 1
 407 IF p$="2" THEN  INK 2
 408 IF p$="3" THEN  INK 3
 409 IF p$="4" THEN  INK 4
 410 IF p$="5" THEN  INK 5
 411 IF p$="6" THEN  INK 6
 412 IF p$="0" THEN  INK 0
 413 IF p$="7" THEN  INK 7: IF p
$>"7" OR p$<"0" THEN  GO TO 404
 420 LET a=LEN a$: PRINT  INK 7;
AT 21,0;a$: BEEP .1,1: BEEP .1,2
: BEEP .1,3: BEEP .1,4: BEEP .1,
5: BEEP .1,6
 421 FOR f=0 TO 8*a-1: FOR n=0
TO 7
 422 IF POINT (f,n)=0 THEN  GO T
O 430
 424 PLOT f*3,5,n*4+140-p: DRAW
 4,0: DRAW 0,4: DRAW -4,0: DRAW 0
,-3: DRAW 3,0: DRAW 0,2: DRAW -2
,0: DRAW 0,-1: DRAW 2,0: DRAW -2
,-2
 426 DRAW 5,5: DRAW 0,4: DRAW 0,
-4: DRAW 4,0: DRAW 0,4: DRAW 0,-
4: DRAW -5,-5
 428 DRAW 0,4: DRAW 5,5: DRAW -4
,0: DRAW -5,-5
 430 NEXT n: NEXT f
 520 DRAW 5,5: DRAW 0,4: DRAW 0,
-4: DRAW 4,0: DRAW 0,4: DRAW 0,-
4: DRAW -5,-5
 521 DRAW 0,4: DRAW 5,5: DRAW -4
,0: DRAW -5,-5
 522 NEXT n: NEXT f
 523 IF a$="3D WORD" THEN  PAUSE
 60: GO TO 40
 525 INPUT "Write some more ? (y
/n)";w$
 526 IF w$="n" THEN  GO TO 535
 527 IF w$="y" THEN  GO TO 500
 530 INPUT "Clear screen (y/n)";
t$
 531 IF t$="y" OR t$="Y" THEN  C
LS : GO TO 500
 532 IF t$="n" OR t$="N" THEN  G
O TO 500
 533 GO TO 525
 535 INPUT "Copy to Z.X. Printer
?";s$
 536 IF s$="y" OR s$="Y" THEN  G
O TO 540
 537 IF s$="n" OR s$="N" THEN  G
O TO 550
 538 GO TO 535
 540 INPUT "How Many Copies ? ";
a$
 541 IF a$="1" THEN  COPY : GO T
O 550
 542 IF a$="2" THEN  COPY : COPY

 543 IF a$="3" THEN  COPY : COPY
: COPY
 544 IF a$="4" THEN  COPY : COPY
: COPY : COPY
 545 GO TO 540
 550 INPUT "Save SCREEN$ ? ";a$
 551 IF a$="y" THEN  SAVE  "3D"S
CREEN$ : GO TO 560
 552 IF a$="n" THEN  GO TO 560
 553 GO TO 550
 560 INPUT "Return to Menu ? ";a
$
 561 IF a$="y" OR a$="Y" THEN  G
O TO 9
 562 IF a$="n" OR a$="n" THEN  G
O TO 525
 563 GO TO 560
 600 CLS : PRINT AT 0,3; INK 1;
PAPER 5;"SCORPIO SOFTWARE 3D WOR
DS"
 601 PRINT AT 3,0; INK 1; FLASH
1;"LOAD """" SCREEN$ MODE"
 602 PRINT AT 5,0;"Change to siz
e of print required"
 603 PRINT "then LOAD the SCREEN
$ YOU WANT"
 604 PRINT "to work on."
 605 PRINT AT 12,0; INK 2;"R=Ret
urn to Menu  J=LOAD SCREEN$ "
 606 IF INKEY$="r" OR INKEY$="R"
 THEN  GO TO 9
 432 INPUT "Write Some More ?(y?
n)  ";w$
 433 IF w$="n" THEN  GO TO 445
 434 IF w$="y" THEN  GO TO 436
 436 INPUT "Clear screen ?";t$
 437 IF t$="y" OR t$="Y" THEN  C
LS : GO TO 400
 438 IF t$="n" OR t$="N" THEN  G
O TO 400
 439 GO TO 436
 440 CLS
 445 INPUT "Copy to Z.X.Printer?
";s$
 446 IF s$="y" OR s$="Y" THEN
GO TO 448
 447 IF s$="n" THEN GO TO 460
 448 INPUT "How Many Copies ?";a
$
 449 IF a$="1" THEN  COPY : GO T
O 180
 450 IF a$="2" THEN  COPY : COPY

 452 IF a$="3" THEN  COPY : COPY
: COPY
 453 IF a$="4" THEN  COPY : COPY
: COPY : COPY
 460 INPUT "Save SCREEN$  ?";a$
 461 IF a$="y" THEN  GO TO 465
 462 IF a$="n" THEN  GO TO 470
 465 SAVE "3D" SCREEN$
 470 INPUT "Return to Menu ? ";w
$
 471 IF w$="y" OR w$="Y" THEN  G
O TO 9
 472 IF w$="n" OR w$="N" THEN GO
TO 432
 473 GO TO 470
 500 INPUT "Pixels from the top(
)=8 pixels)";p
 502 INPUT "Letters(6 max)    ";a
$: IF LEN a$>6 OR LEN a$<1 THEN
BEEP 1,-30: GO TO 90
 505 INPUT "Colour (0-6)";p$
 506 IF p$="1" THEN  INK 1
 507 IF p$="2" THEN  INK 2
 508 IF p$="3" THEN  INK 3
 509 IF p$="4" THEN  INK 4
 510 IF p$="5" THEN  INK 5
 511 IF p$="6" THEN  INK 6
 512 IF p$="0" THEN  INK 0
 513 IF p$="7" THEN  INK 7: IF p
$>"7" OR p$<"0" THEN  GO TO 505
 515 LET A=LEN a$: PRINT  INK 7;
AT 21,0;a$: BEEP .1,1: BEEP .1,2
: BEEP .1,3: BEEP .1,4: BEEP .1,
5: BEEP .1,6
 516 FOR f=0 TO 8*a-1: FOR n=0 T
O 7
 517 IF POINT (f,n)=0 THEN  GO T
O 522
 518 PLOT f*5,n*5+140-p: DRAW 4,
0: DRAW 0,4: DRAW -4,0: DRAW 0,-
3: DRAW 3,0: DRAW 0,2: DRAW -2,0
: DRAW 0,-1: DRAW 2,0: DRAW -2,-
2
 607 IF INKEY$="J" OR INKEY$="j"
 THEN CLS : LOAD ""SCREEN$ : BE
EP .1,0: GO TO 80
 608 GO TO 606
 700 SAVE "3D WORDS" LINE 1
 701 VERIFY "3D WORDS"
 702 RUN


DOUG- THIS IS EXAMPLE!!
OF SOME Sinclair/Users program
print outs,may be you can improv
e

I'm about out of paper
```


How to save money when buying a computer.

1) Examine wallet.

2) Examine problem requiring computer.

3) Buy a slide rule.

MY PET DINOSAUR

by Dick Scoville

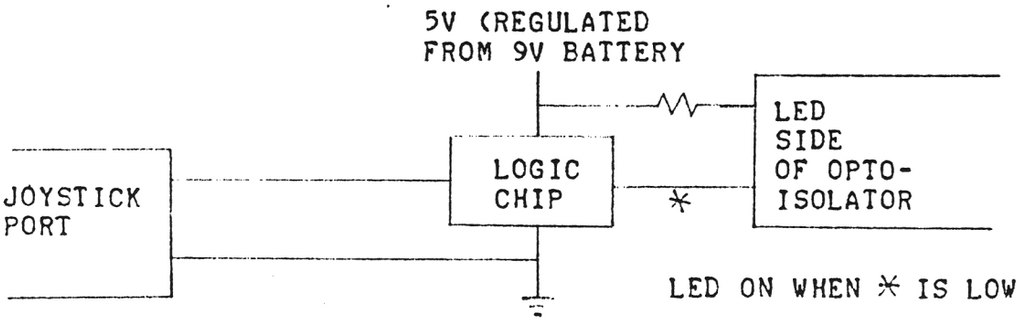
VERY-LONG-TIME READERS OF THE TSUG NEWSLETTER MIGHT REMEMBER THE PRIDE (AND RELIEF) I TRIED TO CONVEY, WHEN, HAVING SPENT THE GOOD PART OF A SUMMER ON IT, MY MODEL 28 TELETYPEWRITER ACTUALLY BEGAN TO RESPOND TO RND USR'S FROM MY ZX81.

THIS TIME AROUND, ON THE 2068, IT WAS FAIRLY EASY, BUT A FEW POINTS MIGHT BE OF ENOUGH INTEREST TO RECORD THEM:

FIRST, ALTHOUGH THE TIMEX MANUAL SAYS OTHERWISE, THE GROUND PIN ON THE JOYSTICK PORT WAS NOT CONNECTED. TO REMEDY THIS, I OPENED THE BACK, FOUND A BIG ELECTROLYTIC CAP NEAR THE JOYSTICK CONNECTOR, TOOK A CHANCE AND JUMP-WIRED THE JOYSTICK "GROUND" PIN TO THE MINUS SIDE OF THE CAP. THIS TAKES SOME COURAGE, BUT IT REALLY IS VERY SIMPLE.

WHY DID I DO THIS? BECAUSE THE MANUAL ALSO EXPLAINS HOW THE JOYSTICK PORT CAN BE USED FOR OUTPUT, AND SURELY A GROUND IS NEEDED FOR COMPARISON OF THE SIGNAL WITH GROUND.

SECOND, I HAD A FANATIC URGE TO PROTECT MY COMPUTER FROM THE 130 VOLT DC "CURRENT LOOP" OF THE MODEL 28, SO I USED AN OPTO-ISOLATOR AS FOLLOWS:



NOW, WHENEVER THE LED SIDE OF THE OPTO-ISOLATOR LIGHTS UP, CURRENT CAN PASS ON THE OTHER SIDE, BUT NONE OF IT CAN ATTACK THE COMPUTER. I DON'T WANT TO GIVE YOU THE ACTUAL CIRCUITS, BECAUSE THEY ARE ALL SECOND-HAND--MAINLY FROM JOSEPH J. CARR'S BOOK, "Z80 USERS MANUAL."

THIRD, (ALTHOUGH THIS IS SECOND-HAND ALSO FROM THE TIMEX MANUAL, I FEEL MORE CONFIDENT ABOUT GIVING IT TO YOU) THIS IS THE CODE THAT TURNS THE LEFT JOYSTICK PORT TO AN OUTPUT PORT (ASSUMING REGISTER A CONTAINS THE BYTE TO BE SENT). KEEP IN MIND, HOWEVER, THAT ONLY FIVE PINS ARE AVAILABLE FOR OUTPUT, (JUST AS ONLY FIVE ARE AVAILABLE FOR INPUT). ONLY BITS 0, 1, 2, 3 AND 7 OF A ARE SENT:

```
PUSH AF       F5
LD A,07       3E07
OUT (F5),A    D3F5
LD A,7F       3E7F
OUT (F6),A    D3F6
LD A,0E       3E0E
OUT (F5),A    D3F5
POP AF        F1
OUT (F6),A    D3F6
```

FOURTH AND FINALLY, I DESCRIBED RECENTLY HOW TO TURN "LPRINT" TO YOUR OWN PURPOSE, AND OF COURSE THIS PRESENT APPLICATION IS ALMOST IDEAL. (DON'T READ ANY FURTHER IF YOU HAVEN'T SEEN THE EARLIER ARTICLE.) THE TRICK IS TO TAKE THE STREAM OF CHARACTERS FROM THE (MODIFIED) "LPRINT" STATEMENT AND TURN THEM INTO EDIBLE FOOD FOR THE SERIAL DINOSAUR, WHICH CAN DIGEST ONLY BAUDOT CODE (MORE OR LESS EXTINCT, ALTHOUGH IT IS THE ORIGIN OF THE MODERN WORD "BAUD." LATER MODELS OF THE TELETYPEWRITER USE ASCII.) IT WOULD BE SILLY TO DESCRIBE HERE THE ARCANE AND ARCHAIC WORKINGS OF THE MODEL 28 DINOSAUR--IF YOU OWN ONE, WRITE TO ME. SUFFICE TO SAY THAT WHEN YOUR PROGRAM IS WORKING, "LPRINT" WILL BEHAVE EXACTLY AS YOU WOULD WISH, SLOWLY BUT HAPPILY PRINTING OUT LINES OF 64 CHARACTERS.

*** NOTE ***

Our Group is planning to have a "swap and shop" meeting in November. If you have a computer, a program or whatever and you want to sell it, bring it to the meeting. That will be Sunday, December 1, 1985.

THE LAST WORD

I WANT TO THANK PETER MCMULLIN, 2340 QUEEN ST. EAST, TORONTO, CANADA M4E1G9, FOR THE USE OF WORD SINC II.5 AND WORD FONTVI.3. LOOK FOR A REVIEW OF THESE WORD PROCESSING PROGRAMS IN FUTURE ISSUES.

WHILE WORD SINC II.5 IS FASTER THAN MEMOTEXT WHEN PRINTING WITH THE STANDARD CHARACTER SET, IT IS SLOW WHEN PRINTING CHARACTERS IN GRAPHICS MODE. THE PRINTING SPEED CAN BE DOUBLED, WITH SOME LOSS IN PRINT QUALITY, BY POKING 18419 WITH 121 DECIMAL. THIS WORKS ON MY GEMINI-10X-ED.

The Triangle Users' Group meets once a month on the first Sunday of each month at 2:00 pm in the Dreyfus Auditorium of the Research Triangle Park facility just off of Cornwallis Road. The public is welcome, in fact the public is invited. Membership in our Users' Group is $15.00 a year. We have a large public that we serve, and we need sustaining contributions in the form of money, articles for the newsletter, or occasional letters telling us you are interested in receiving our publication. The donation of goods and monies by members and business friends alike is a welcome occurence and is also tax-deductible.

TRIANGLE SINCLAIR USERS' GROUP OFFICERS:

President: Doug Dewey, 206 James ST., Carrboro, NC 27510, 919-929-3079.
Vice President: Bill Roberts, 136 Manhattan Court, Cary NC 27511, 1-919-467-7755.
Secretary: Dick Scoville, 2313 W. Club Blvd., Durham, NC 27705, 919-286-4959.
Treasurer: Mike Boyce, 3313 East Oak Dr., Durham, NC 27712, 919-383-2000.

Board of Operators

Special Assistance: Hiawatha Demby Jr.
Refreshments: Carol K. Roberts

Send mail and inquires to Doug.

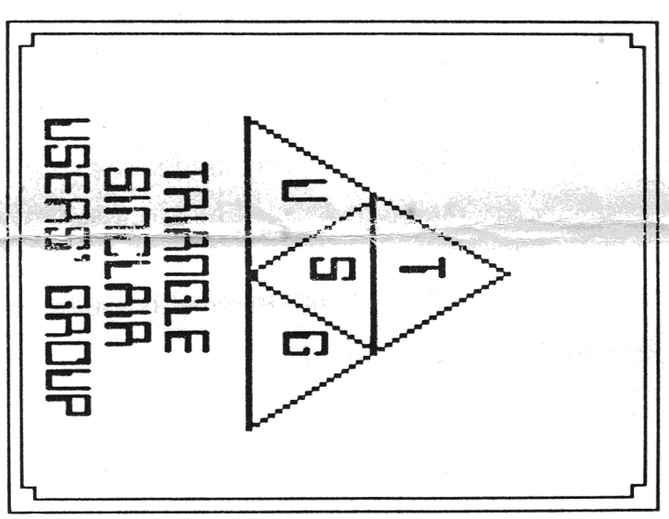
If you would like to join our User's Group then fill out the application form below and send it along with a check for $15.00 (1 year's membership) to Doug's address. You will receive 12 issues of the Triangle Sinclair User's Group Newsletter .

NAME:_____
ADDRESS:_____
TOWN:_____ STATE:_____ ZIP CODE:_____
PHONE:_____

AGE:___
I own a: TS 1000 ___, TS2068 ___, OTHER:_____
I plan to buy a QL ___
I own a modem___
I want articles on: hardware projects ___, software___, reviews___, machine code ___.
I would like to write some articles for the newsletter___.
I would like to_____.

SEND TO:

Doug Dewey
206 James St.
Carrboro, NC 27510

Triangle Sinclair
User's Group
c/o Douglass Dewey
206 James St.
Carrboro, NC 27510

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